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Theater Support Vessel (TSV) Industry Day Requirements Briefing

18 Mar 2003

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Agenda

- Program Vision / Value Added
- Background
- Concept
- Mandatory Requirements
- Supportability Assessment
- Capabilities



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Day Program Vision

- The TSV will, initially, augment and then replace selected legacy watercraft such as the LCU-2000 and several variants of Army floating craft that were conceptualized and built in the 1970s - 80s to support a forward deployed heavy force.
- The TSV will be optimized to support operational movement and maneuver of interim and objective forces while continuing to provide support to current heavy forces.
- The TSV will be a platform built using existing technologies that have been developed in the commercial market place.
- Military utility will be further enhanced by integrating existing commercial & military technologies to improve vessel productivity, survivability and supportability.
- Research and Development effort is not in developing technologies but in integrating the appropriate existing and emerging technologies.



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Background

- **Title 10 USC:** Provides statutory guidance on Service missions – Army to provide “land forces, aviation and watercraft support...”
- **(U) DPG 04-09:** Anti-Access Support (Joint Logistics Over-The-Shore (JLOTS)): *JLOTS will provide required operational maneuver capabilities in areas of anti-access or area-denial and/or underdeveloped ports.*
- **Joint Guidance:** Joint Logistics Over-the-Shore (JLOTS) is a unified commander’s joint *employment of Army and Navy LOTS assets to deploy and sustain a force*. JLOTS operations allow U.S. strategic sealift ships to discharge through inadequate or damaged ports, or over a bare beach. *JLOTS watercraft can also be used to operationally reposition units and materials within a theater.*



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Background

- Theater Logistics Vessel (TLV) Operational Requirements Document (ORD) approved 17 Jan 00
- Current Army watercraft not optimized to support Objective Force operational movement & maneuver
 - Slow, lack passenger capability, no self-sustained capability; limited force protection capability
- US Army executes contract for High Speed Vessel HSV-X1
 - Accepts vessel delivery Oct 01
- Office of the Secretary of Defense (OSD) approves TSV Advanced Concept Technology Demonstration (ACTD) Sep 02
- US Army accepts delivery of TSV-1X Nov 02



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TSV Mission

(Derived From DPG and Joint Guidance)

- Rapidly self deploy to a Joint Operations Area (JOA) and *provide operational and tactical level intra-theater sealift of forces* (personnel and equipment) and *delivery of sustainment* to forces within the JOA.
- Conduct intra-theater movement and maneuver from staging areas or intermodel transfer points within the JOA from shore-to-shore or ship-to-shore allowing it *entry into unimproved or degraded ports*.
- Provide the JFC and ASCC a strategically responsive platform for *positioning and repositioning of ground*



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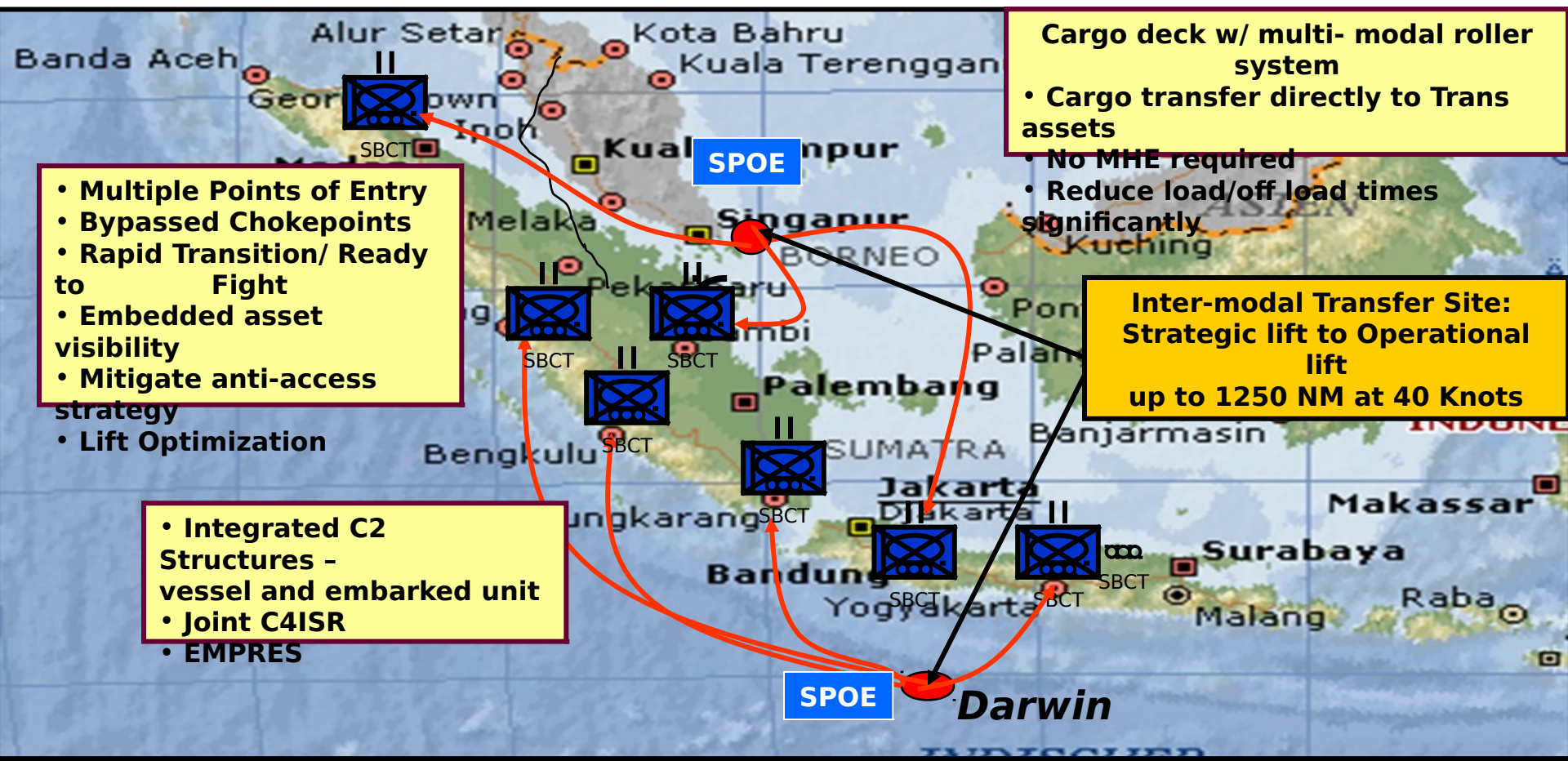
Concept

- Rapid shore to shore intra-theater sea lift of combat ready unit sets to support operational maneuver
- Multiple points of entry through minor / degraded ports
- Follow-on sustainment and/or repositioning of units in forward area
- Mitigates anti access strategy; reduces demand on scarce airframes
- Will initially augment and then replace selected legacy LCU-2000 and other watercraft as they reach their Economic Useful Life (EUL)



TSV Industry Day Concept Sketch

- Supports Delivery Across Expanded Battle Space
- Scheme of maneuver is flexible and coordinated
- Reduced footprint in JOA





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Value^{Day} Added to Warfight

- Provides intra-theater movement & maneuver of combat ready unit sets within the Joint Operational Area (JOA) from Intermediate Staging Bases (ISB), from Sea Ports of Embarkation (SPOE) and from in-stream discharge
- Extends the operational commander's maneuver space
 - Agility to bypass damaged or congested ports,
 - Shortens Main Supply Routes (MSR)
 - Enhance the scheme of maneuver by providing alternate MSRs
- Mitigates enemy's anti-access strategy
 - Combat power can be simultaneously inserted thru multiple points of entry denied to strategic shipping.



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Value^{Day} Added to Warfight

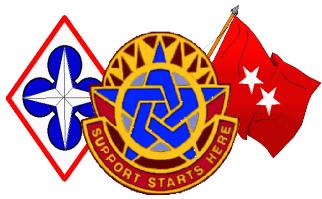
- Reduces demand on airframes
- Reduces footprint and Reception, Staging, Onward Movement and Integration (RSOI) in JOA
- Reception & staging occur in inter-modal transfer point or ISB
- Mitigates requirement for over-the-beach Joint Logistics Over The Shore (JLOTS)
- Delivers combat power ready to fight off-the-ramp



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Mandatory Requirements

1. Intra-theater lift
2. Roll On / Roll Off (RO/RO)
3. Cargo Deck & Ramp
4. Load / Unload non-RO/RO
5. Passengers
6. Self-Deployment
7. Interoperability
8. Shallow Draft



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Intra-Theater Lift Requirements

	Threshold	Objective
¹ Speed:	36 Knots	50 Knots
² Range:	1250 NM	2500 NM
³ Payload:	754 ST	1250 ST

¹ Speed is in fully loaded condition in sea state 3

² Operational Radius is 1/2 of range

³ Include Soldier-Passengers



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Conduct Roll On/Roll Off (RO/RO) Operations

Rationale:

- Approximately 62% to 75% Army major maneuver element cargoes are RO/RO*
- Loading & Discharging RO/RO cargoes by RO/RO is 400% faster than by use of shore side cranes
- TSV will operate in minor /degraded ports where shore side cranes are not available
- Without RO/RO capability TSV cannot accomplish intended mission

* MTMC PAM 700-2



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Cargo Deck/ Ramp Weight Requirements

Cargo Deck and Ramp Weight Load M1A2 (Main Battle Tank)
Capable

Rationale:

- M1A2 to remain in Army inventory for the foreseeable future
- 6 of 10 active Army division level maneuver elements are heavy divisions with significant quantities of M1A2s
- TSV primary mission is to support force closure (ISBs/POEs)
- Without M1A2 cargo loading/transport capability TSV can only support 30-40% of active Army division level maneuver elements.



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Non-RO/RO Cargo Requirements

Receive/Discharge non-RO/RO Containers & Pallets w/o Shore Side Cranes

- 20' ISO Containers, Flat Racks, CROP, 463L Pallets

Rationale:

- 8%-16% of cargoes in support of Army's major maneuver consist of non RO/RO cargoes*
- TSV mission profile is to insert forces and follow-on sustainment through minor / degraded ports where shore side cranes and other MHE may not be available
- Without "self-sustained" capability TSV cannot fully support force

* MTMC PAM 700-5



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Passenger Requirements

Transport 354 Combat Ready Soldiers

Rationale:

- Enables operational movement of 2 Stryker Brigade Combat Team (SBCT) infantry companies
- 12 Objective TSV sorties will transport all personnel in SBCT Bde
- Without PAX capability TSV cannot accomplish intended mission of operational movement of ready to fight elements



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Self Deployment Requirements*

Threshold:

2400 nautical miles (nm) @ 36 knots in Sea State 3 (SS3) and/or 4726 nm @ 24 knots in SS3

Objective: 4726 nm @ 50 knots in SS3

* Light Load: Crew Effects & Stores, No Cargo



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Interoperability Requirements

Interoperability: Communicate secure /unsecure data and voice with higher, lower and adjacent units in a Joint environment.

Rationale:

- IAW Chairman of The Joint Chiefs of Staff Instruction 3170.01B, 15 April 2001
- TSV must possess capability to communicate IAW international maritime standards
- Tactical internet to include Army Command and Control (C2) software applications & Navy FORCEnet and C2 software applications



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Shallow Draft Requirements

Threshold: Maximum 18 ft draft

Objective: Maximum 15 ft draft

Rationale:

- Increased world wide accessibility
 - December, 2002 “Worldwide Port Survey”
 - 282 ports in US Central Command and US Pacific Command
 - Aligns with results from other top level port studies



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Supportability Requirements

- Enhance Deployment Timeliness
 - Real time System Assessment
 - System Redundancy
- Reduce CS/CSS Footprint
 - Embedded Diagnostics/Prognostics
 - Two Level Maintenance (Underway and Shore side)
- Reduce the Cost of Logistics
 - Performance Based Logistics (PBL)
 - Warranty provisions and contract incentives throughout lifecycle



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Other Requirements Vessel Design

- Vessel Length: Not greater than 121 meters
- No less than 2 propulsion plants and propulsors
- Interface with Army causeway systems
- Deck/cargo ramp capable of repositioning 20' ISO containers and 463L pallets without lifting equipment
- Helicopter flight deck (under consideration)
 - Landing, take off and sling loading with rotary wing craft
- Integrated Engineering Control and Surveillance System
- Multi-directional ramp (port/starboard/astern)



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Other Requirements Vessel Design

- Capability to launch, emplace and retrieve fendering without shore side assistance
- 360 degree remote viewing of vessel from the bridge
- Windows
 - must prevent reflective glare and images
 - Bridge windows w/ remote washing and de-icing
- Ability to go “dark ship”
- Panamax - certified for Panama Canal Transit



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Other Requirements

Self Protection*

- Threat identification system integrated with the Integrated Bridge System (IBS)
- Active and Passive capability to defeat enemy rocket and missile fires
- Self defense capability to sense and defeat enemy patrol boats and surface attack threats
- Self protection system remotely controlled from the bridge/pilothouse
- Secure weapons storage
- Ballistic protection on the Bridge for small arms and shrapnel

* Combination of GFM, GFE and Commercial. Contractor is responsible for total system integration



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Other Requirements

Habitability

- Fully operational in hot and basic climates and maintain habitability in basic cold climates
- Separate berthing for officer and enlisted personnel
 - Officer: 8 single occupancy staterooms
 - Enlisted: single or double occupancy staterooms
 - Temporary berthing (hard lie) for 19
- Crew support for no less than 15 consecutive days of operation
 - Potable water production / sewage and waste oil treatment and holding capacities / stores / repair parts / officer – crew showering and toilets / laundry / food storage and preparation / dining areas / sick bay, etc.



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Other Requirements Safety

- Noise abatement IAW Military Standard 1474
- All mandated safety equipment IAW SOLAS, CFR, and IMO for high speed craft
- Primary Life Saving equipment
- Search and Rescue Boat
- Deck Tie Down Points and Fittings
- Lashing Gear and Other Cargo Securing gear



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Other Requirements Embarked Personnel

- 354 troop seats
 - 180 degree recline
 - Personal audio/video system
 - Retractable table surface
- Separate sanitation facilities to include showering and seasickness fixtures
- Storage for personal weapons and equipment



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Other Requirements C4ISR*

- Vessel Operations
 - Commercial Communications/Electronics/Navigation
 - Tactical Communications/Tactical Internet
 - Self-protection
 - Cargo visibility
 - En route mission planning and rehearsal
- Embarked Unit
 - Tactical Communications/Tactical Internet
 - Data processing
 - En route mission planning and rehearsal

* Combination of GFM, GFE and Commercial. Contractor is responsible for total system integration